

AMENDMENT UNDER 37 CFR § 1.111
Serial No. 10/801,711

AMENDMENTS TO THE CLAIMS

This listing of the claims replaces all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

1. [Currently Amended] A method of dynamically controlling a bias point of a photodiode of an optical receiver, the method comprising iteratively repeating steps of:

detecting a performance parameter indicative of an eye opening of an optical signal received by the optical receiver;

comparing a current value to a previous value of the performance parameter;

calculating an adjustment step size and direction based on the comparison result;

and

~~adjusting a bias voltage of the photodiode based on the calculated adjustment step size and direction so as to optimize a value of the detected performance parameter;~~
calculating an updated bias setting value based on a current value of the bias setting and the calculated adjustment step size and direction; and

generating the bias voltage based on the updated bias setting value.
2. [Original] A method as claimed in claim 1, wherein the performance parameter comprises any one of:

an eye opening ratio;

an Optical signal to Noise ratio (OSNR);

an eye quality (IQ); and

a bit error rate.
3. [Cancelled]
4. [Currently Amended] A method as claimed in claim 13, wherein the step of calculating an adjustment step direction comprises a step of reversing the step

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direction if the current value of the performance parameter is less than the previous value.

5. [Currently Amended] A method as claimed in claim 13, wherein the step of calculating an adjustment step size comprises a step of scaling the step size with a relative magnitude of the current value of the performance parameter.
6. [Previously Amended] A controller for dynamically optimizing a bias point of a photodiode of an optical receiver, the controller comprising:
 - detector means for detecting a performance parameter indicative of an eye opening of an optical signal received by the optical receiver; and
 - a processor for calculating a bias point that optimizes a value of the detected performance parameter, the processor operating under control of software code adapted to:
 - compare a current value of the performance parameter to a previous value;
 - calculate an adjustment step size and direction based on the comparison result; and
 - calculate the bias point based on the calculated adjustment step size and direction.
7. [Original] A controller as claimed in claim 6, wherein the performance parameter comprises any one of:
 - an eye opening ratio;
 - an Optical signal to Noise ratio (OSNR);
 - an eye quality (IQ); and
 - a bit error rate.
8. [Original] A controller as claimed in claim 7, wherein the detector means comprises a clock and data recovery (CDR) circuit of the receiver.

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9. [Original] A controller as claimed in claim 7, wherein the detector means comprises a detector circuit associated with a clock and data recovery (CDR) circuit of the receiver.
10. [Previously Amended] A controller as claimed in claim 6, wherein the processor further operates under control of software code adapted to:
calculate an updated bias setting value based on a current value of the bias setting and the calculated adjustment step size and direction
11. [Previously Amended] An optical receiver for receiving an optical communications signal, the receiver comprising:
a photodiode for converting the optical communications signal into a corresponding electrical signal;
detector means responsive to the electrical signal for detecting a performance parameter indicative of an eye opening of the optical signal;
a processor for calculating a bias point of the photodiode that optimizes a value of the detected performance parameter, the processor operating under control of software code adapted to:
compare a current value of the performance parameter to a previous value;
calculate an adjustment step size and direction based on the comparison result; and
calculate the bias point based on the calculated adjustment step size and direction.; and
a bias generator for supplying a bias signal to the photodiode based on the calculated bias point.
12. [Original] A receiver as claimed in claim 11, wherein the performance parameter comprises any one of:
an eye opening ratio;
an Optical signal to Noise ratio (OSNR);

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an eye quality (IQ); and

a bit error rate.

13. [Original] A receiver as claimed in claim 12, wherein the detector means comprises a clock and data recovery (CDR) circuit of the receiver.
14. [Original] A receiver as claimed in claim 12, wherein the detector means comprises a detector circuit associated with a clock and data recovery (CDR) circuit of the receiver.
15. [Original] A receiver as claimed in claim 11, wherein the processor further operates under control of software code adapted to:
calculate an updated bias setting value based on a current value of the bias setting
and the calculated adjustment step size and direction.